

CONTENT STANDARD 6: Materials and Processes

Students will know the origins, properties and processing techniques associated with the material building blocks of technology.

K - 12 PERFORMANCE STANDARDS

<p>Educational experiences in Grades K-4 will assure that students:</p> <ul style="list-style-type: none"> • identify the characteristics of different resources and describe how these resources can serve different purposes; • describe that, by processing resources, the resources can be used differently; • select the appropriate tool for a given need; • use tools and resources correctly and safely; • identify technological resources as materials, people, time, money, information, tools, etc.; and • describe how the processing of resources can produce a more useful product. 	<p>Educational experiences in Grades 5-8 will assure that students:</p> <ul style="list-style-type: none"> • identify and describe a group of new and recycled materials used in technological systems; • differentiate between primary and secondary raw materials; • explore methods used to convert raw and recycled materials into usable products; • demonstrate the appropriate selection and safe operation of basic hand and power tools; • use manual and electronic measuring devices accurately; • explore the principles of manual material-processing techniques; • describe how products are manufactured; <p align="right">(continued)</p>	<p>Educational experiences in Grades 9-12 will assure that students:</p> <ul style="list-style-type: none"> • list the techniques used to extract raw materials from the environment; • describe the physical structures and properties of materials used in technological systems; • classify raw materials according to their physical and mechanical properties; • distinguish between organic and inorganic materials; • experiment with the alteration of material characteristics; • differentiate between natural and artificial materials; • research, plan and participate in recycling activities; • identify secondary materials and processes through product analysis; and <p align="right">(continued)</p>
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K-12 PERFORMANCE STANDARDS, continued

Educational experiences in **Grades 5-8** will assure that students:

- demonstrate a working knowledge of the layout, shaping, smoothing, assembly and finishing techniques used to produce a product;
- explore the principles of computer-controlled processing techniques; and
- produce simple products from a variety of materials, using manual and computer-controlled devices.

Educational experiences in **Grades 9-12** will assure that students:

- produce products with raw and recycled materials by separating, forming, combining, conditioning and finishing.